INFORMATION ABOUT:

Fuelwood Gathering

U.S. Department of the Interior **Bureau of Land Management**

5353 Yellowstone Road
P.O. Box 1828
Cheyenne, Wyoming 82003-1828

Telephone 307-775-6256
Fax 307-775-6129

Useful information for the fuelwood purchaser is provided below:

Fuelwood Measurements

A **cord** which is the most common measure of firewood volume is 4 by 4 by 8 feet. Outside dimensions equal 128 cubic feet. Solid wood equals 75-90 cubic feet depending on wood size, bark thickness, and how compactly it is piled.

A 4 by 8 foot by 16 inch "face" known as a **face cord** equals one third of a cord. A face cord is an illegal unit of measurement for fuelwood sale. Legal sale units are cord, fraction of a cord, cubic feet or weight.

On the average a full half ton pickup will hold approximately one-half cord.

Gross Energy Equivalent and Heating Efficiency

One air-dry (12% moisture content) cord of fuelwood equals the heat equivalent of approximately:

- One ton of coal
- 150 - 175 gallons of fuel oil
- 22,000 - 24,000 cubic feet of natural gas

The net effective heating capability of fuelwood is determined by the efficiency of your wood burner. Different types are compared below:

Burner	% Efficiency
Fireplace	10%
Wood Stove (Open)	25%
Wood Stove (Airtight)	50%
Wood Furnace	60%
Oil Furnace	65%

Gathering Suggestions

Proper planning of your fuelwood harvest efforts will improve your efficiency and maximize your benefits. Some helpful considerations are listed below:

- Determine your objectives. If economic savings are important, you must find material close enough so your vehicle fuel costs and fixed expenses do not exceed the price of fuelwood purchased from a local retailer.
- BTU's per air-dried pound of wood vary considerably. For the best return on your efforts, select a species with the higher BTU values. Recognize wood burner efficiency for maximum BTU utilization.
- Choose a species with low spark throwing characteristics if you use an open burner.
- Cut green fuelwood at least six months before using it. The best time is before the sap rises in the spring or in the late fall. Cut block lengths to fit your wood burner grate. Split large blocks while they are green. Seasoned wood usually splits harder. Cross-stack wood to allow air circulation and optimum drying conditions.
- Follow the safety precautions outlined in your chainsaw operating instructions booklet.

Types of Wood

There are three types of wood found in the forests: live trees, standing dead trees (snags) and dead down wood.

A live tree is a standing woody plant with roots secured into the ground and with green needles or leaves on at least part of the tree, except that during winter dormancy, the live deciduous trees such as aspen or cottonwood will have brown or yellow leaves on the tree or on the ground nearby.

Standing dead trees can be divided into two types: coniferous trees such as pine and deciduous

trees such as aspen. A standing dead coniferous tree is a woody plant with roots secured into the ground with red or brown needles or with no needles and loose or fallen bark. A standing dead deciduous tree is a standing woody plant with roots secured into the ground, but without leaves on the tree or the ground and with bark that is loose or fallen from the tree trunk.

Dead down wood is a woody tree or part of a woody tree lying on the ground as the result of natural mortality or because of previous cuffing.

Selecting the Best Firewood

Softwood like pine is easy to ignite because it is resinous. It burns rapidly with a hot flame. However, since a fire built entirely of softwoods burns out quickly, it requires frequent attention and replenishment. This characteristic of softwoods can be a boon if you want a quick warming fire or a short fire that will burn out before you go to bed or step out for the evening.

For a long lasting fire it is best to use the heavier dense woods such as oak, Douglas-fir, pinyon or juniper. They give the most uniform and shortest flames and produce steady, glowing coals. When you have several logs burning in your grate, you can settle back for a steady show of flame.

The heat that a log produces depends on the concentration of woody material, resin, water and ash. Since woods are of different compositions, they ignite at different temperatures and give off different heat values, therefore, it is beneficial to mix light and heavy woods to achieve the ideal fire.

How to Handle Wood

To accelerate the drying process after cutting green wood:

- cut early in the year.
- split the larger block.
- stack wood loosely in a sunny location.
- cover the stack with clear plastic.

To store wood:

- stack it outside away from live trees to avoid any possibility of contaminating live trees from diseased or insect-infested cut wood.
- keep it off the ground to prevent water absorption from the soil and decay of the lowest tiers.
- as a fire precaution, don't stack wood against your house.

Firewood Characteristics

Type	*Wt. Range lbs/cord	**Approximate BTU per pound	Splits	Sparks
Aspen	1995 - 2394	8,400	easily	few
Cottonwood	1837 - 2205	8,300	hard	few
Douglas-fir	2617 - 3141	9,200	easily	moderate
Lodgepole pine	2152 - 2583	8,600	easily	moderate
Gambel Oak	3562 - 4275	13,000	hard	few
Pinyon pine	3000 - 3600	11,100	hard	many
Ponderosa pine	2100 - 2520	9,100	easily	moderate
Spruce	1837 - 2205	8,100	easily	many
Juniper	3000 - 3600	10,300	hard	many

*Weight figured for air-dried wood.
**One BTU (British Termal Unit) is the heat needed to raise one pound of water one degree Fahrenheit.